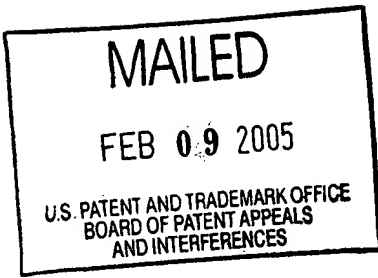


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte THOMAS ECKEL, MICHAEL ZOBEL
and DIETER WITTMANN

Appeal No. 2005-0591
Application No. 09/720,280

ON BRIEF

Before GARRIS, OWENS and KRATZ, Administrative Patent Judges.
KRATZ, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 2-15, 18, 20 and 22-24, which are all of the claims pending in this application.

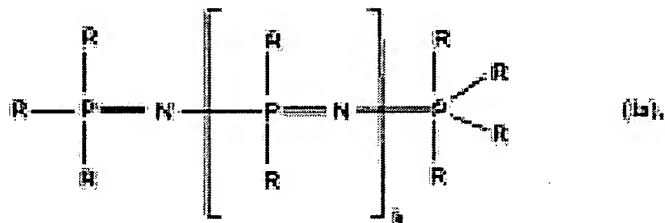
BACKGROUND

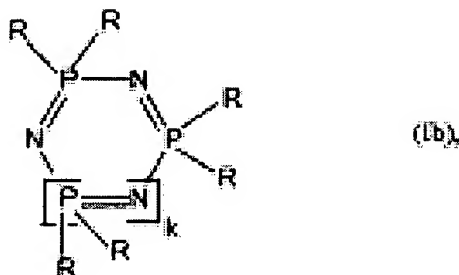
Appellants' invention relates to a molding composition prepared from, inter alia, (1) aromatic polycarbonate or polyester carbonate, (2) graft polymer, (3) selected phosphazene(s) and (4) finely divided inorganic powder of a

particle diameter less than or equal to 200 nm. A further understanding of the claimed invention can be derived from a reading of exemplary claim 2, which is reproduced below.

2. A thermoplastic moulding composition consisting essentially of:

- A) 40 to 99 parts by weight of at least one of aromatic polycarbonate and polyester carbonate;
- B) 0.5 to 60 parts by weight of graft polymer comprising,
 - B.1) 5 to 95 wt.% of one or more vinyl monomers, and
 - B.2) 95 to 5 wt.% of one or more grafting backbones having a glass transition temperature of $<10^{\circ}\text{C}$;
- C) 0 to 45 parts by weight of at least one thermoplastic polymer selected from at least one member of the group consisting of vinyl (co)polymers and polyalkylene terephthalates;
- D) 0.1 to 50 parts by weight of at least one member selected from the group consisting of phosphazenes represented by the following formula (1a) and phosphazenes represented by the following formula (1b),





in which

- R is in each case identical or different and denotes (I) at least one member selected from the group consisting of amino and C₁ to C₈ alkyl, in each case optionally halogenated; and (ii) at least one member selected from the group consisting of C₁ to C₈ alkoxy, C₅ to C₆ cycloalkyl, C₆ to C₂₀ aryl and C₇ to C₁₂ aralkyl, in each case optionally substituted by at least one member selected from the group consisting of alkyl and halogen, and
- k denotes 0 or a number 1 to 15;
- E) 0.5 to 40 parts by weight of finely divided inorganic powder having an average particle diameter of less than or equal to 200 nm;
- F) 0 to 5 parts by weight of fluorinated polyolefin; and
- G) optionally at least one additive selected from the group consisting of lubricants, mould release agents, nucleating agents, antistatic agents, stabilisers, dyes and pigments.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Bodiger et al. (Bodiger)	5,849,827	Dec. 15, 1998
Maruyama et al. (Maruyama) (published European Patent Application)	0 728 811	Aug. 28, 1996

Claims 2-15, 18, 20 and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Maruyama in view of Bodiger. We refer to the brief and reply brief and to the answer for an exposition of the opposing viewpoints expressed by appellants and the examiner concerning the issues before us on this appeal.

OPINION

Having carefully considered each of appellants' arguments set forth in the briefs, appellants have not persuaded us of reversible error on the part of the examiner. Accordingly, we will affirm the examiner's rejection as set forth in the answer. We add the following for emphasis and completeness.

As correctly noted by the examiner (answer, page 2), the appealed claims stand or fall together. In this regard, appellants state that "[c]laims 2-15, 18, 20 and 22-24 are appealed together" (brief, page 4). Accordingly, we select claim 2 as the representative claim on which we decide this appeal and limit our discussion thereto.

Appellants do not dispute that Maruyama teaches or suggests a flame retardant thermoplastic molding composition that reasonably corresponds to the composition required by appealed claim 2 but for a lack of explicitly specifying the inclusion of inorganic powder having a particle diameter within the size range claimed. See page 2, line 49 through page 5 line 4 of Maruyama and page 5 of appellants' brief.

As correctly noted by the examiner, Bodiger (column 1, lines 51-56) discloses that "an addition of extremely finely divided inorganic powders together with flame retardants in thermoplastic polycarbonate molding compositions produces a significant reduction in the burning times and hence a considerable improvement in the flame proofing." Moreover, Bodiger (column 8, lines 21 and 22) discloses that "all phosphorous compounds conventionally used" may be employed as flame retardants.

Based on those disclosures of Bodiger taken with Maruyama, we agree with the examiner that one of ordinary skill in the art would have been led, prima facie, to employ the finely divided inorganic powders¹ of Bodiger as an additive in the molding

¹ In the abstract, Bodiger discloses that the finely-divided inorganic powders are added in amounts that correspond to appellants' claimed amounts and have a mean particle diameter of 1 to 200 nm which corresponds to appellants' claimed particle

composition of Maruyama with the reasonable expectation that such an addition would have a favorable influence on the flame retardant properties of the molding composition of Maruyama. Moreover, we note that Maruyama teaches that additional flame retardants, as well as other additives including talc (an inorganic material), may be employed in the molding composition at page 5, lines 17-19 of the published European Patent Application. Consequently, that disclosure in combination with Bodiger would have further suggested to one of ordinary skill in the art the option of enhancing the flame retardant properties of the molding composition of Maruyama via the addition of the finely divided inorganic powders of Bodiger alone or together with additional flame retardants added therewith based on the combined teachings of the references and with a reasonable expectation of success in so doing.

Appellants maintain that one of ordinary skill in the art would not have been led to employ the finely divided inorganic powder of Bodiger in the phosphazene-containing molding composition of Maruyama because Bodiger do not explicitly list or describe phosphazenes as being the flame retardant that is used

size limitation.

in combination with a finely divided inorganic powder for enhancement of the flame retardant effect thereof. In advancing that argument, appellants dismiss Bodiger's teaching that all conventional phosphorous compounds may be used as the flame retardant in combination with the finely divided inorganic oxides by asserting that "the flame resistance of a phosphazene containing composition is not measurably improved by the inclusion of finely divided inorganic powders therein" (brief, page 7). In support, appellants refer to Table 27 of their specification.

We are not persuaded of a lack of motivation to combine the teachings of the applied references based on that line of rebuttal argument and evidence. In this regard, we agree with the examiner that the data presented in appellants' Table 27 does not establish that adding finely divided inorganic powders to the molding composition of Maruyama would result in a lack of measurable improvement in enhancing the flame retardant properties thereof. Indeed, appellants acknowledge that good flame resistance is obtained for the two Examples employing the added finely divided inorganic powder notwithstanding the markedly reduced phosphazene content employed in the molding composition of those examples compared to the comparative

Example.² See page 27, lines 8-10 of appellants' specification. Consequently, appellants' argument (reply brief, pages 2 and 3) that the decrease of phosphazene content between the particular molding composition of comparison Example 1 and the finely divided inorganic powder containing molding compositions of Examples 2 and 3 is minimal is inconsistent with appellants' statement in the specification and not persuasive of any error in the examiner's obviousness position. In this regard, it is not clear how Examples 2 and 3 can be fairly compared with comparative Example 1 regarding the effect of adding inorganic powders on the flame inhibition properties of the particular molding compositions tested given the "percentage" difference in amount of phosphazene flame retardant used in those examples. Moreover, we note that the single comparison example without finely divided inorganic powder addition together with the two examples with the additive powder presented in that Table is a showing which is clearly considerably more narrow in scope than the claimed subject matter.

² The UL-94 V tests reported in that Table show that each of the Examples and the comparative Example achieved the same UL-94 V-0 classification notwithstanding that the additive-containing Examples were conducted using a significantly lower percentage content of phosphazene flame retardant in the molding composition than used in the comparative Example.

Thus, the relied upon evidence falls significantly short of discrediting the examiner's position that one of ordinary skill in the art at the time of the invention would have been led by the teachings of Bodiger and Maruyama to add finely divided inorganic powders to the molding composition of Maruyama with the reasonable expectation that such would result in enhancing the flame retardant properties thereof based on the combined teachings thereof as discussed above and in the answer.

Appellants' contention that the combination of the applied references would not result in a composition corresponding to the composition of the appealed subject matter is not persuasive because the combined teachings of Maruyama and Bodiger reasonably suggest employing the finely divided inorganic powder of Bodiger with all phosphorous compounds conventionally employed, which would include the phosphazene flame retardants of Maruyama. To the extent appellants' argument is directed to the use of other flame retardants in conjunction with the phosphazene flame retardant as taught by Maruyama, we note that the use of those other flame retardants together with phosphazene is disclosed as an option rather than being required by Maruyama. Moreover, to the extent that one of ordinary skill in the art would have been led to exercise that option of using multiple flame retardants by

the combined disclosures of Maruyama and Bodiger, we agree with the examiner that the recited "consisting essentially of" language of representative claim 2 does not preclude the presence of other flame retardants in a composition encompassed by that claim. Concerning this matter, we note that the claim term "consisting essentially of" provides for inclusion of not only what is specifically recited in appellants' claims, but also any other materials which do not materially affect the basic and novel characteristics of appellants' composition. See In re Herz, 537 F.2d 549, 551-552, 190 USPQ 461, 463 (CCPA 1976); In re De Lajarte, 337 F.2d 870, 873-874, 143 USPQ 256, 258 (CCPA 1964); In re Janakirama-Rao, 317 F.2d 951, 954, 137 USPQ 893, 896 (CCPA 1963).

Moreover, the burden of establishing that any composition components of the prior art references applied by the examiner are excluded from the claims as argued appropriately rests with appellants. See In re Herz, 537 F.2d at 551-552, 190 USPQ at 463 and Ex parte Hoffman, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Int. 1989). Here, appellants' specification (paragraph bridging pages 20 and 21) makes clear that the use of other flame retardants would be compatible with their composition, not detrimental thereto.

CONCLUSION

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED


PETER F. KRATZ
Administrative Patent Judge

) BOARD OF PATENT
) APPEALS
) AND
) INTERFERENCES

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